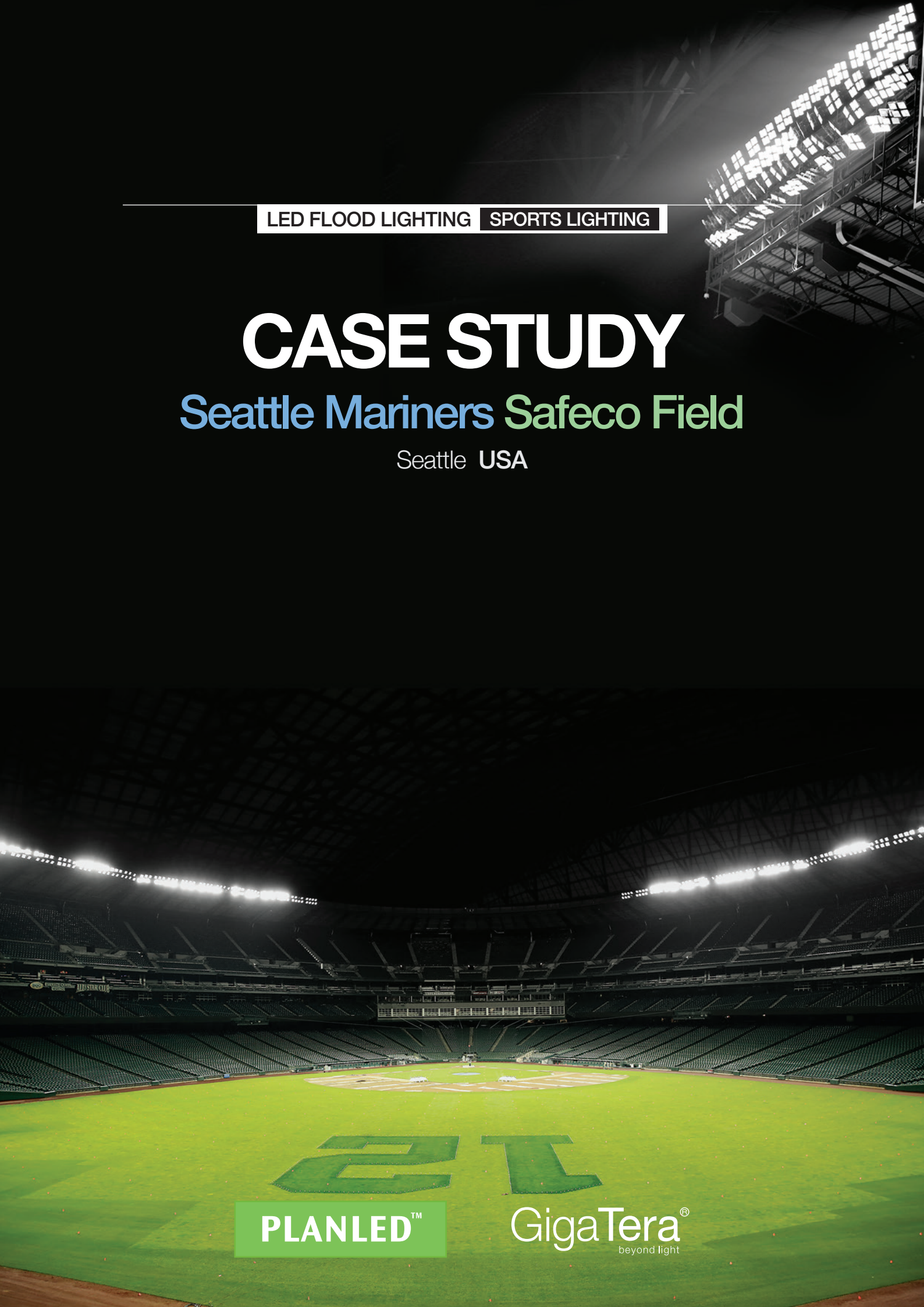
LED FLOOD LIGHTING SPORTS LIGHTING

CASE STUDY

Seattle Mariners Safeco Field

Seattle **USA**



PLANLED™

GigaTera®
beyond light

Installation Area : **Baseball Stadium Lighting**

Seattle Mariners Safeco Field USA

Energy Saving **63%**

CO2 Reduction **65%**

Enhance Illuminance **40%** Avr

Annual Electricity Saving **$50,000**

Seattle Mariners

The Seattle Mariners are an American Major League Baseball team and the hometown team of Seattle, Washington State, USA. The Mariners are a member of the Western Division of Major League Baseball's American League. The home team was originally enfranchised in 1977, and its current stadium, Safeco Field is equipped with a retractable roof. Seattle has won the A.L. West Championship three times in 1995, 1997 and 2001. In 2001, they have set a regular-season record of 116 wins and 46 loses in the regular-season in the American League, and set the record in the American League for the most wins in a single season. *(Source: Wikipedia)*

Summary

Introducing the first LED lighting system to be used in Major League Baseball after 2 years of careful inspections and preparations a midst tough competition among well-known lighting companies from around the world.
GigaTera's product proved to be ahead-of-the-curve in terms of performance and succeeded in winning the contract for the project.
The introduction of a LED and lighting system not only enables energy savings and an enhancement to the eco-friendly image fo the team but also is expected to contribute to the improved athletic performance of the players.

Project

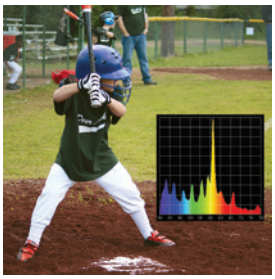
Each existing 2.0kW (2.13kW_ including ballast loss) metal halide lamp was benched for a SUFA 800W product, GigaTera®'s brand of sports lighting. Rigorous field testing was performed including dozens of on-site inspections and simulation design work to ensure an optimal design of the lighting. This is a case of lighting exceeding strict MLB lighting regulations were met and GigaTera® has successfully established a new standard for professional sports lighting.

Benefits

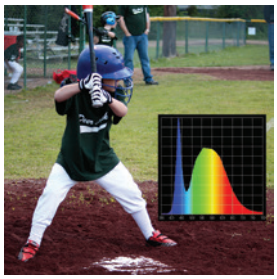
- First ever introduction of eco-friendly LED lighting to Major League Baseball
- Improved luminance of 40% over existing lighting
- Energy savings of over 60% and reduced maintenance costs
- 20 times longer product life time than previous lighting
- Improved athletic performance by players thanks to improvements in uniformity luminance
- Optimal HDTV broadcasts now possible (Flicker free)
- Improvements in the color rendering index results in color that is closest to natural light
- Instant On/Off function (previous system requires 15 minutes to preheat before turning on)

CRI Difference

Both fans in the stands and those watching at home can enjoy games under optimal conditions compared to the previous lighting system thanks to improvements in the color reproduction ratio that is closest to natural light.



Existing lighting (63Ra / 3700K)



SF800 (81Ra / 5000K)

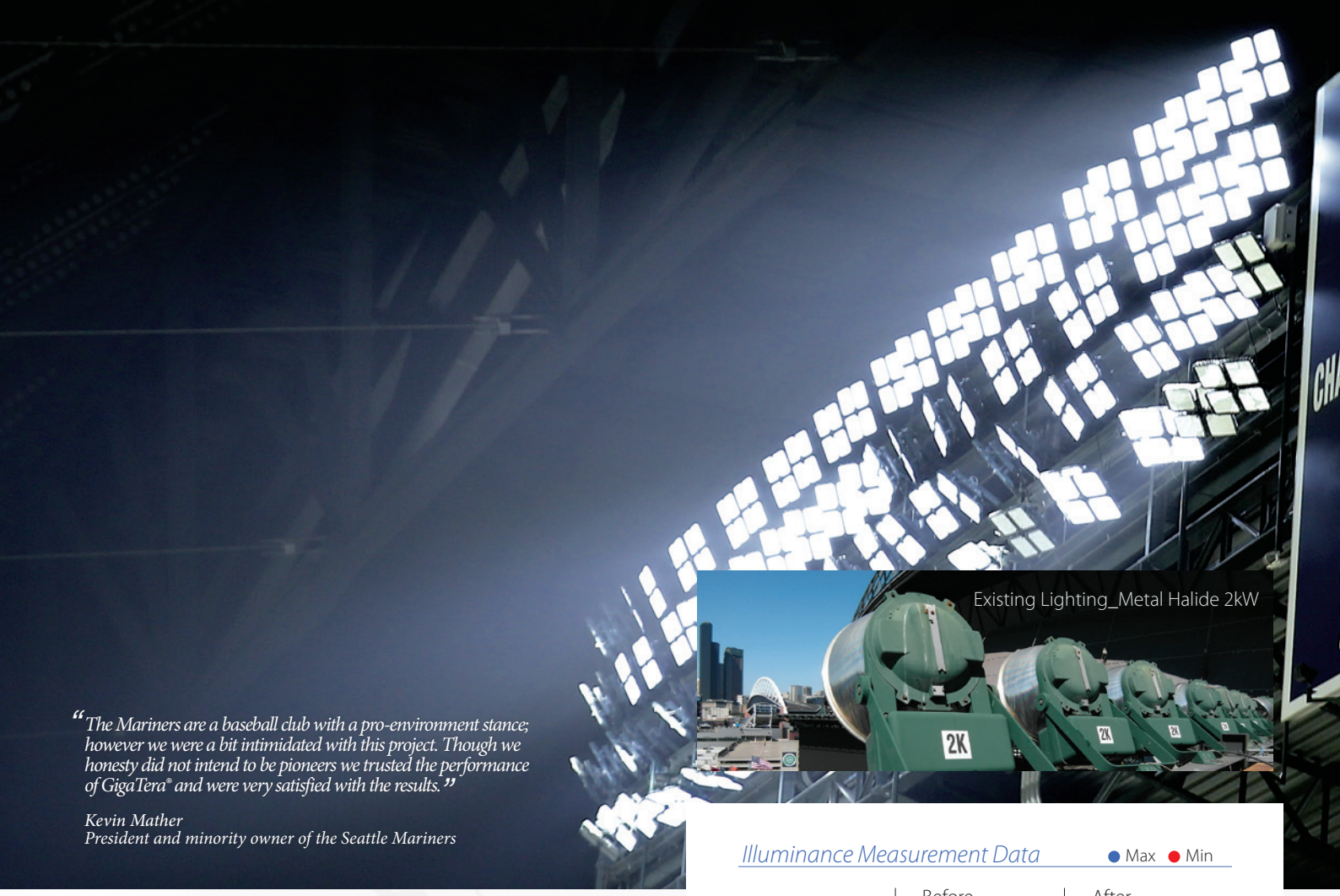
Non Flickering

Catching the subtleties of baseball is important when broadcasting games. Clear viewing is possible with no flicker even during playback in ultra-slow motion at 960 frames per second even in a high-definition and ultra-high definition broadcasting environment.

UHD TV Ready

Existing lighting
(Flicker present)

SF800
(Flicker free)



"The Mariners are a baseball club with a pro-environment stance; however we were a bit intimidated with this project. Though we honesty did not intend to be pioneers we trusted the performance of GigaTera® and were very satisfied with the results."

Kevin Mather
President and minority owner of the Seattle Mariners

Site Information

Application	Sports Flood Lighting
Location	Safeco Field (Seattle_USA)
Light source	SF800
Lighting support	PlanLED Technical Team

Install Data

	Before	After
Model Name	MHL	SF800
Power Consume	2,130 W	800 W
Q'ty	579	578
Total Power	1,233.3 KW	462.4 KW
Energy Saving(%)	63 %	

Light Quality Analysis

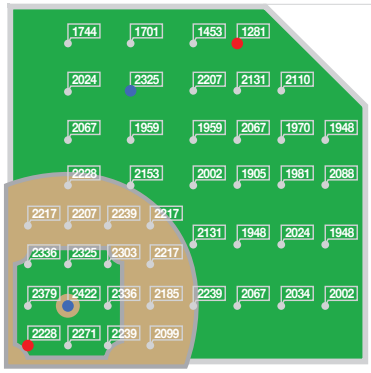
	Existing lighting	GigaTera SF800
Light Level	30% dimmer than league standards	Exceeds league standards
Color Rendering	63 (unsatisfactory for high definition broadcasts)	81 (satisfactory for high definition broadcasts)
R9	-113 (unsatisfactory)	+5 (satisfactory)
Flickering	presence of flicker phenomenon	No flicker phenomenon
Color Temperature	3500 ~ 3800 K	5000 K
Uniformity	Shadows visible	Uniformity luminance
Noise	Noisy	Silent
Glare	Causes light pollution and glare	None
Control	More than 15 minutes warm-up required prior to operation	Instant On/Off function

Illuminance Measurement Data

● Max ● Min

	Before	After
Average	2,088 lx	2,917 lx
Minimum	1,281 lx	2,228 lx
Maximum	2,422 lx	3,423 lx
Emin / Emax	0.529	0.651
Emin / Eav	0.614	0.764
Enhance Illuminance	40 %	

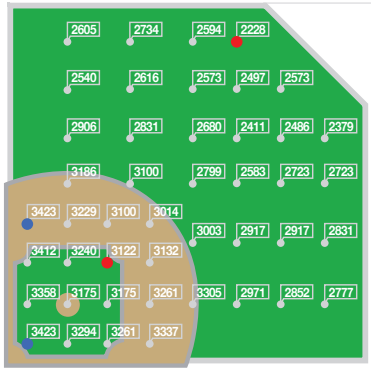
Before Data



INFIELD	
Average	2,314 lx
Minimum	2,228 lx
Maximum	2,422 lx
Emin / Emax	0.92
Emin / Eav	0.96

OUTFIELD	
Average	2,034 lx
Minimum	1,281 lx
Maximum	2,325 lx
Emin / Emax	0.55
Emin / Eav	0.63

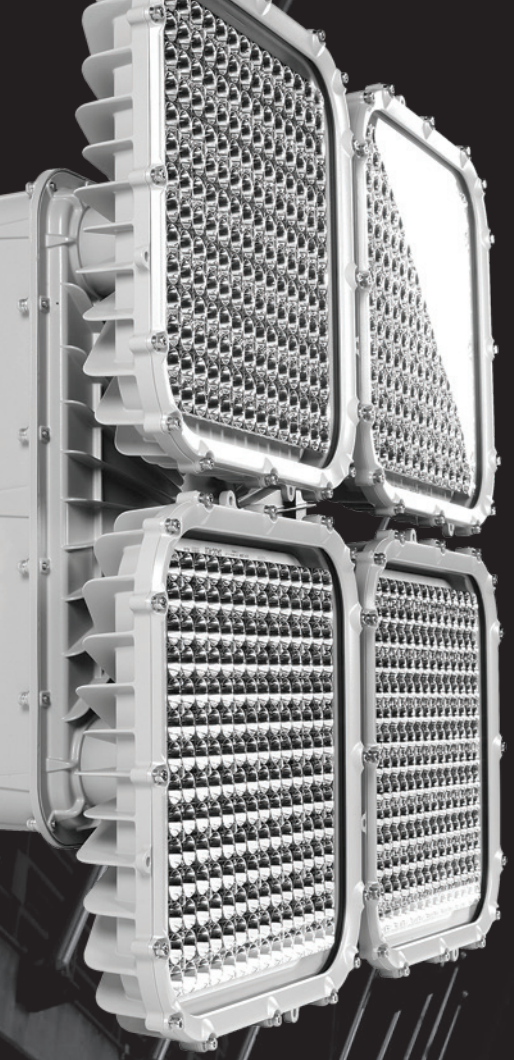
After Data



INFIELD	
Average	3,272 lx
Minimum	3,122 lx
Maximum	3,423 lx
Emin / Emax	0.91
Emin / Eav	0.95

OUTFIELD	
Average	2,809 lx
Minimum	2,228 lx
Maximum	3,423 lx
Emin / Emax	0.65
Emin / Eav	0.79

(Measurements made with a Minolta Model T-10 digital photometer)*



SUFA 800

Unique & **Better**

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